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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/981,440 | 10/16/2001 | Michael Greenstein | 10004416 | 5699 |

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AGILENT TECHNOLOGIES, INC.
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EXAMINER

LAM, ANN Y

ART UNIT PAPER NUMBER

1641

DATE MAILED: 10/02/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,440

Applicant(s)

GREENSTEIN ET AL.

Examiner

Ann Y. Lam

Art Unit

1641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3, line 3, and claim 6, line 3, recites the limitation "second array". There is insufficient antecedent basis for this limitation in the claim.

Claim 17, line 3, recites the limitation "a third array". Since a second array has not been claimed in claim 17 nor claim 1, from which claim 17 depends, it is unclear whether or not a second array is claimed.

The claims in general are replete with grammatical errors (for example, claim 2, line 3, "comprising" should be –comprises; claim 2, line 4, "a second array" should be – the second array; claim 3, "comprising" should be –comprises.)

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1641

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7 and 10-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Austin et. al., 6,203,683.

Austin et al. disclose a localized heat source (see column 2, lines 63-67 and column 3, lines 10-15); and a first array of temperature-controlled zones (see column 3, lines 22-24) comprising reactants.

As to claim 2, said localized heat source comprises a second array of electromagnetic radiation emitters (see column 3, lines 22-24, and column 8, lines 5-15) positioned to correspond with the first array of temperature-controlled zones.

As to claim 3, the second array of electromagnetic radiation emitters comprises vertical cavity surface emitting laser light sources (see column 8, lines 5-15.)

As to claims 4 and 5, said second array transmits infrared light through the reactants (see column 8, lines 5-15, and column 8, lines 35-39.)

As to claim 6, said second array comprises a light emitting diode, an infrared lamp, an infrared laser or infrared diode laser (see column 8, lines 5-15 and column 8, lines 35-39.)

As to claim 7, said light source generates infrared light of a different wavelength (see column 8, lines 5-15.)

As to claim 10, second array of internal heat generators is positioned within said first array (see column 3, lines 11-14 and lines 20-24.)

As to claim 11, said internal heat generators comprises resistive heaters inductive heaters or Peltier heaters (see column 2, lines 44-46, and column 8, lines 6-15.)

As to claim 12, a third array of electrical leads correspond with the second array of internal heat generators (see column 3, lines 20-24.)

As to claim 13, said second array correspond to the second array of external heat generators (see column 3, lines 20-24 and column 8, lines 10-16.)

As to claim 14, a power supply is disclosed (see column 8, lines 4-9.)

As to claim 15, a controller (see column 8, lines 4-9) coupled to said power supply for controlling the drive current is disclosed.

As to claim 16, said controller modulates the power supply based on a temperature measured from the temperature-controlled zones (see column 8, lines 4-9, and column 11, lines 7-21.)

As to claim 17, a third array of temperature monitors is positioned to correspond to said first array (see column 11, lines 7-21, and column 3, lines 20-24.)

As to claim 18, said reactants comprise assay elements for body fluid analysis.

As to claim 19, Austin et al. disclose a method comprising heating a first array of temperature-controlled zones (see column 3, lines 22-24) containing reactants with a localized heat source (see column 2, lines 63-67 and column 3, lines 10-15); measuring the temperature of said temperature-controlled zones (see column 11, lines 7-21, and

column 3, lines 20-24); modulating said localized heat source (see column 11, lines 7-21, and column 3, lines 20-24); and regulating the temperature of said temperature-controlled zones (see column 11, lines 7-21, and column 3, lines 20-24.)

As to claim 20, the method further comprises modifying at least one absorptive property of said reactants (see column 12, lines 49-61.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Austin et. al., 6,203,683.

Austin et al. disclose the invention substantially as claimed, except for the light sources generating infrared light with a wavelength of at least .775 micrometers, or at most 7000 micrometers.

Austin et al. teach that polymerase chain reaction for nucleic acid amplification involves heating and controlling the temperature of the apparatus (see column 1, lines 55-59.) Austin et al. also teach that heating could be achieved by infrared light sources shining directly on the chip (see column 8, lines 13-15), and the embodiments discussed are not considered as limiting the scope of the invention and that modifications and variations of the embodiments are possible without departing from the

invention and that equivalents of the invention may be practiced (see column 12, line 62 – column 13, line 5.) Thus, it would have been obvious that the infrared light sources disclosed by Austin et al. (see column 8, lines 13-15) include infrared light sources that are capable of emitting wavelengths as claimed by Applicant, since these infrared light sources would not depart from the invention in that they are infrared lights sources that would provide the necessary heating of the reactants.

Conclusion

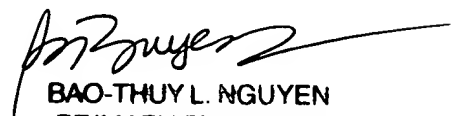
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pourahmadi et al., 6,440,725, discloses use of resistive and infrared heaters to heat a fluid sample in reaction chambers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ann Y. Lam whose telephone number is (703) 306-5560. The examiner can normally be reached on M-Sat 11-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long V. Le can be reached on (703)305-3399. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0196.

A.L. 


BAO-THUY L. NGUYEN
PRIMARY EXAMINER